



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

November 10, 2021

Cherilyn Moore  
Regulatory Product Manager  
Syngenta Crop Protection, LLC  
P.O. Box 18300  
Greensboro, NC 27419

Subject: Registration Review Label Amendments for Simazine Incorporating Mitigation Measures from the Interim Decision and the Technical Registrants' Commitments for the Endangered Species Act (ESA) Biological Evaluation  
*Product Name:* PRINCEP 4L HERBICIDE  
*EPA Registration Number:* 100-526  
*Application Date:* 11/20/2020  
*Decision Number:* 568104

Dear Ms. Moore:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all the information submitted with your application to support the Registration Review of the above referenced product in connection with the Simazine Interim Decision and with the technical registrants' commitments for the ESA Biological Evaluation. The Agency has concluded that your submission is acceptable. The label referred to above, submitted in connection with registration under FIFRA, as amended, is acceptable.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

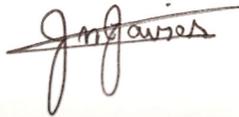
A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only

Page 2 of 2  
EPA Reg. No. 100-526  
Decision No. 568104

distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

If you have any questions about this letter, please contact Anna Senninger at [Senninger.Anna@epa.gov](mailto:Senninger.Anna@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Julie Javier", written over a light-colored rectangular background.

Julie Javier, Team Leader  
Risk Management and Implementation Branch 4  
Pesticide Re-Evaluation Division  
Office of Pesticide Programs

Enclosure

[Master Label]

Sale, use, and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

Not for use in the states of Hawaii or Alaska or in the U.S. territories (Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, and the North Mariana Islands).

**SIMAZINE    GROUP    5    HERBICIDE**

Princep® 4L

Herbicide

For weed control in certain crops

Active Ingredient:

Simazine: 2-chloro-4,6-bis(ethylamino)-s-triazine ..... 41.9%

Other Ingredients: ..... 58.1%

Total: ..... 100.0%

Princep 4L contains 4 lb active ingredient per gallon.

**KEEP OUT OF REACH OF CHILDREN.**

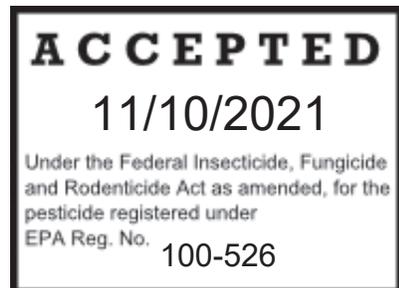
**CAUTION**

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-526

EPA Est.

Net Contents



<b>FIRST AID</b>	
<b>If on skin or clothing</b>	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If in eyes</b>	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
<b>If swallowed</b>	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Have person sip a glass of water if able to swallow.</li><li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
<b>If inhaled</b>	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
<b>HOT LINE NUMBER</b> For 24 Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident), Call <b>1-800-888-8372</b>	

---

**PRECAUTIONARY STATEMENTS**

---

**Hazards to Humans and Domestic Animals****CAUTION**

Harmful if absorbed through the skin. Causes moderate eye irritation. Harmful if swallowed or inhaled. Avoid breathing vapors or spray mist. Avoid contact with skin, eyes, or clothing.

## Personal Protective Equipment (PPE)

### All mixers, loaders, applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, polyvinyl chloride (PVC) ≥14 mils, or Viton® ≥14 mils
- Shoes plus socks

Applications made by mechanically pressurized handguns to strawberries are restricted to either spot treatment only or mixer/loader/applicators must wear coveralls over long-sleeved shirt and long pants in addition to the PPE specified above.

Mixer/loader/applicators for backpack application to grapefruit and oranges must wear coveralls over long-sleeved shirt and long pants in addition to the PPE specified above.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

## Engineering Control Statements

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### User Safety Recommendations

#### Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## Environmental Hazards

Simazine can travel (seep or leach) through soil and can enter ground water which may be used as drinking water. Simazine has been found in ground water. Users are advised not to apply simazine to sand and loamy sand soils where the water table

(ground water) is close to the surface and where these soils are very permeable; i.e., well-drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water.

This pesticide is toxic to aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash water.

Product must not be mixed or loaded within 50 feet of intermittent streams and rivers, natural or impounded lakes and reservoirs. Product must not be applied within 66 feet of points where agricultural field (nurseries, Christmas tree plantings, and turf grasses for sod farms) surface water runoff enters perennial or intermittent streams and rivers or within 200 feet of natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 foot buffer or setback from runoff entry points must be planted to crop, or seeded with grass or other suitable crop.

Product must not be mixed or loaded, or used within 50 feet of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 ft. of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide to the mixing/loading sites.

Additional State imposed requirements regarding well-head setbacks and operational area containment must be observed.

One of the following restrictions must be used in applying simazine to tile-outletted terraced fields containing standpipes:

- Do not apply within 66 feet of standpipes in tile-outletted terraced fields.
- Apply this product to the entire tile-outletted terraced field and immediately incorporate it to a depth of 2-3 inches in the entire field.

- Apply this product to the entire tile-outletted terraced field under a no-till practice only when a high crop residue management practice is practiced. High crop residue management is described as a crop management practice where little or no crop residue is removed from the field during and after crop harvest.

#### **NON-TARGET ORGANISM ADVISORY STATEMENT**

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

---

## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

---

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions, or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

ANY USE OF THIS PRODUCT IN AN AREA WHERE USE IS PROHIBITED IS A VIOLATION OF FEDERAL LAW. Before using this product, you must consult the Simazine Watershed Information Center (SWIC) to determine whether the use of this product is prohibited in your watershed. SWIC can be accessed through [www.simazine-watershed.info](http://www.simazine-watershed.info) or 1-888-365-2874. If the SWIC indicates that use of this product is prohibited in your watershed, you may return this product to your point of purchase or contact Syngenta Crop Protection, LLC for a refund.

### Endangered Species

It is a Federal offense to use any pesticide in a manner that results in an unauthorized "take" (e.g., kill or otherwise harm) of an endangered species under the Endangered Species Act section 9. When using this product, you must follow the measures contained in the Endangered Species Protection Bulletin for the area in which you are applying the product. You must obtain a Bulletin no earlier than six months before using this product. To obtain Bulletins, consult <http://www.epa.gov/espp/>, call 1-844-447-3813, or email [ESPP@epa.gov](mailto:ESPP@epa.gov). You must use the Bulletin valid for the month in which you will apply the product.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

**For Christmas trees, do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 48 hours. For all other crops and use patterns, do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.** Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

#### **NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter or allow others (including children or pets) to enter treated areas until sprays have dried.

**FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR WEED CONTROL, AND/OR ILLEGAL RESIDUES.**

#### **USE RESTRICTIONS**

Sale, use, and distribution of this product in Nassau and Suffolk Counties in the State of New York is prohibited.

Not for use in the states of Hawaii or Alaska or in the U.S. territories (Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, and the North Mariana Islands).

**Do not** apply this product through any type of irrigation system.

For use on warm season turf grass **only** (e.g., Bermudagrass, Centipedegrass, St. Augustinegrass, and Zoysiagrass).

All shelterbelt and forestry uses, except "Christmas Tree Plantings", are prohibited.

This product is not for use in formulating end-use products for aquatic use.

Applications made by mechanically pressurized handguns are restricted to spot treatment only for the following uses

- Citrus (Grapefruit, Oranges, Lemons)
- Pome Fruits (Apples, Pears)
- Stone Fruits (Cherries [sweet and tart], peaches, Plums, Nectarines)
- Tree Nuts (Pecans, Walnuts, Filberts, Almonds, Macadamia Nuts)

- Berry and Small Fruit (Blueberries, Blackberries, Loganberries, Raspberries, Grapes, Lowbush Blueberries, Cranberries)
- Tropical and Sub-tropical Fruits (Avocado, Olive)
- Nursery/Ornamentals
- Sweet Corn

Applications made by mechanically pressurized handguns to strawberries are restricted to either spot treatment only or mixer/loader/applicators must wear coveralls over long-sleeved shirt and long pants, shoes plus socks, and gloves made of barrier laminate, butyl rubber  $\geq 14$  mils, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, polyvinyl chloride (PVC)  $\geq 14$  mils, or Vitron®  $\geq 14$  mils.

---

## **PRODUCT INFORMATION**

---

### **Aerial application is prohibited.**

When tank mixing or sequentially applying simazine or products containing simazine, the total pounds of simazine applied must not exceed the specific maximum rate per calendar year as noted in the use directions.

Apply Princep 4L herbicide before weeds emerge or after removal of weed growth. Princep 4L controls a wide variety of annual broadleaf and grass weeds when used at selective rates in agricultural crops.

Where a range of application rates is given, use the low rate on coarse-textured soil and soil lower in organic matter; use the high rate on fine-textured soil and soil higher in organic matter.

Since Princep 4L enters weeds mainly through their roots, moisture is needed to move it into the root zone. Very dry soil conditions following application may necessitate shallow cultivation or rotary hoeing.

Princep 4L is nonflammable.

## ANNUAL WEEDS CONTROLLED

---

alyssum	common lambsquarters
annual bluegrass	Nightshade
annual morningglory	pepperweed
annual ryegrass	pigweed
barnyardgrass (watergrass)	pineappleweed
burclover	prickly lettuce
carelessweed	common purslane
carpetweed	ragweed
common chickweed	rattail fescue
crabgrass ( <i>Digitaria</i> spp.)	redmaids
downy brome (cheatgrass)	Russian thistle
fall panicum	shepherdspurse
fiddleneck	signalgrass ( <i>Brachiaria</i> spp.)
filaree	silver hairgrass
fireweed	smartweed
fivehook bassia	spanishneedles
Flora's paintbrush	speedwell
Florida pusley	tansymustard
foxtails	wild mustard
goosegrass	wild oats
groundsel	witchgrass
henbit	yellow flower pepperweed
jungerice	
knawel (German moss)	

## WEED RESISTANCE MANAGEMENT

<b>SIMAZINE</b>	<b>GROUP 5</b>	<b>HERBICIDE</b>
-----------------	----------------	------------------

Simazine, the active ingredient in this product, is a Group 5 herbicide based on the mode of action classification system of the Weed Science Society of America. Any weed population may contain plants naturally resistant to Group 5 herbicides. Such resistant weed plants may not be effectively managed using Group 5 herbicides but may be effectively managed utilizing another herbicide alone or in mixtures from a different group and/or by using cultural or mechanical practices. However, an herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides. Consult your local company representative, state cooperative extension service, professional consultants or other qualified authorities to determine appropriate actions for treating specific resistant weeds.

### Scout and know your field

- Know weed species present in the field to be treated through scouting and field history. An understanding of weed biology is useful in designing a resistance

management strategy. Ensure the weed management program will control all weeds present.

- Fields should be scouted prior to application to determine species present and growth stage. Always apply this herbicide at the full labeled rate and correct timing for the weeds present in the field.

#### **Utilize non-herbicidal practices to add diversity**

- Use diversified management tactics such as cover crops, mechanical weed control, harvest weed seed control, and crop rotation as appropriate.

#### **Use good agronomic practices, start clean and stay clean**

- Use good agronomic practices that enhance crop competitiveness.
- Plant into weed-free fields utilizing tillage or an effective burndown herbicide for control of emerged weeds.
- Sanitize farm equipment to avoid spreading seed or vegetative propagules prior to leaving fields.

#### **Difficult to control weeds**

- Fields with difficult to control weeds should be planted in rotation with crops that allow the use of herbicides with an alternative mode of action or different management practices.
- Difficult to control weeds may require sequential applications, such as a broad spectrum preemergence herbicide followed by one or more postemergence herbicide applications. Utilize herbicides containing different modes of action effective on the target weeds in sequential applications.

#### **Do not overuse the technology**

- Do not use more than two applications of this or any other herbicide with the same mode of action in a single growing season unless mixed with an herbicide with a different mode of action which provides overlapping spectrum for the difficult to control weeds.

#### **Scout and inspect fields following application**

- Prevent an influx of weeds into the field by controlling weeds in field borders.
- Scout fields after application to verify that the treatment was effective.
- Suspected- herbicide resistant weeds may be identified by these indicators
  - Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
  - A spreading patch of non-controlled plants of a particular weed species; and
  - Surviving plants mixed with controlled individuals of the same species.

- Report non-performance of this product to your Syngenta retailer, Syngenta representative, or call 1-866-Syngent(a) (866-796-4368). If resistance is suspected ensure weed escapes are controlled using an herbicide with an effective mode of action and/or use non-chemical means to prevent further seed production.

**Prevent weed escapes before, during, and after harvest**

- Do not allow weed escapes to produce seed or vegetative structures such as tubers or stolons which contribute to spread and survival. Consider harvest weed seed management and control weeds post-harvest to prevent seed production.

**Resistant Weeds**

Contact your local Syngenta representative, retailer, crop advisor or extension agent to determine if weeds resistant to this mode of action are present in your area. If resistant biotypes have been reported, use the full labeled rate of this product, apply at the labeled timing, and tank-mix with a different mode of action product so there are multiple effective modes of application for each suspected resistant weed.

## PERENNIAL CROP REPLANTING

If replanting perennial crops, do not apply Princep 4L in the year preceding planting these crops, unless otherwise stated on this label, or crop injury may occur.

---

## APPLICATION PROCEDURES

---

**Ground application:** Use conventional ground sprayers equipped with nozzles that provide accurate and uniform application. Be certain that nozzles are uniformly spaced and the same size. Calibrate sprayer before use and recalibrate at the start of each season and when changing carriers. Unless otherwise specified, use a minimum of 20 gal of spray mixture per acre.

Use a pump with capacity to: (1) maintain 35-40 psi at nozzles, (2) provide sufficient agitation in tank to keep mixture in suspension, and (3) to provide a minimum of 20% bypass at all times. Use centrifugal pumps which provide propeller shear action for dispersing and mixing this product. The pump should provide a minimum of 10 gal/minute/100 gal. tank size circulated through a correctly positioned sparger tube or jets.

Use screens to protect the pump and to prevent nozzles from clogging. Screens placed on the suction side of the pump should be 16-mesh or coarser. Do not place a screen in the recirculation line. Use 50-mesh or coarser screens between the pump and boom, and where required, at the nozzles. Check nozzle manufacturer's recommendations.

For band applications, calculate amount to be applied per acre as follows:

$$\frac{\text{band width in inches}}{\text{row width in inches}} \times \text{broadcast rate per acre} = \text{amount needed per acre of field}$$

### MANDATORY SPRAY DRIFT MANAGEMENT

#### Ground Boom Applications:

- User must only apply with the release height recommended by the manufacturer, but no more than 4 feet above the ground or crop canopy.
- Applicators are required to use a coarse or coarser droplet size (ASABE S572)
- Do not apply when wind speeds exceed 10 miles per hour at the application site.
- Do not apply during temperature inversions.
- User must maintain a 15 foot (4.6 meter) in-field downwind buffer (in the direction in which the wind is blowing) from the edge of streams and rivers, as well as high-tide line for all estuarine/marine environments

## **SPRAY DRIFT ADVISORIES**

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

### **IMPORTANCE OF DROPLET SIZE**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

#### **Controlling Droplet Size – Ground Boom**

- Volume – Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure – Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray nozzle – Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce spray drift.

#### **BOOM HEIGHT – Ground Boom**

For ground equipment, the boom should remain level with the crop and have minimal bounce.

### **SHIELDED SPRAYERS**

Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

### **TEMPERATURE AND HUMIDITY**

When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

### **TEMPERATURE INVERSIONS**

Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### **WIND**

Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS. Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

## Handheld Technology Applications

Take precautions to minimize spray drift.

---

### MIXING PROCEDURES

---

**All Uses:** (1) Be sure sprayer is clean and not contaminated with any other materials, or crop injury or sprayer clogging may result. (2) Fill tank  $\frac{1}{4}$  full with clean water, nitrogen solution, or complete fluid fertilizer. (3) Start agitation. (4) Be certain that the agitation system is working properly and creates a rippling or rolling action on the liquid surface. (5) If any dry herbicides are being tank mixed, add them to the tank and allow them to become thoroughly suspended. (6) Then pour Princep 4L directly from jug into tank. (7) Continue filling tank until 90% full. Increase agitation if necessary to maintain surface action. (8) Add other liquid tank mix herbicide(s) after this product is thoroughly suspended. (9) Finish filling tank. Maintain agitation to avoid separation of materials. (10) Empty tank as completely as possible before refilling to prevent buildup of emulsifiable concentrate residue from possible tank mix herbicides. (11) If an emulsifiable concentrate film starts to build up in tank, drain it and clean with strong detergent solution or solvent. (12) Clean sprayer thoroughly immediately after use by flushing system with water containing a detergent.

**Compatibility test:** To determine the tank mix compatibility of Princep 4L with liquid fertilizer, crop oil, spreaders, or other recommended pesticides, use this test method. Nitrogen solutions or complete fluid fertilizers may replace all or part of the water in the spray in corn. Since liquid fertilizers can vary, even within the same analysis, check compatibility each time before use. Be especially careful when using **complete** suspension or fluid fertilizers, as serious compatibility problems are more apt to occur. Commercial application equipment may improve compatibility in some instances. Check compatibility using this procedure:

1. Add 1 pt of fertilizer to each of 2 one-qt glass jars with tight lids.
2. To **one** of the jars, add  $\frac{1}{4}$  tsp. of a compatibility agent approved for this use ( $\frac{1}{4}$  tsp. is equivalent to 2 pt/100 gal spray). Cap and shake until mixed. Examples of compatibility agents include Compex® and Unite®.
3. To **both** jars, add the appropriate amount of herbicide(s). If more than one herbicide is used, add them separately with dry herbicides first, flowables next, and emulsifiable concentrates last. After each addition, cap and shake until thoroughly mixed. The appropriate amount of herbicides for this test follows (assuming a spray volume of 25 gal/A):

**Dry herbicides:**                      **For each pound per acre**, add 1.5 teaspoons to each jar. Fluff up wettable powder products before

measuring.

**Liquid herbicides:** For each pint per acre, add 0.5 teaspoon to each jar.

For a spray volume other than 25 gal/A, change the teaspoons added to each jar as follows:

$$\frac{25 \text{ gal X no. teaspoons given above}}{\text{desired gal spray volume per acre}} = \text{teaspoons to add to each jar}$$

4. After adding all ingredients, put lids on and tighten. Shake jars vigorously one minute. Let the mixtures stand 15 minutes and then look for separation, large flakes, precipitates, grease, gels, medium to heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the 2 jars. If either mixture separates, but can be remixed readily, the mixture can probably be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (A) slurry the dry herbicide(s) in water before addition, or (B) add  $\frac{1}{2}$  of the compatibility agent to the fertilizer and the other  $\frac{1}{2}$  to the emulsifiable concentrate or flowable herbicide before addition to the mixture. If still incompatible, do not use the materials mixed in the same spray tank.

---

## CROP USE DIRECTIONS

---

### FRUIT AND NUT CROPS

Apply the spray to the orchard or vineyard floor, avoiding contact with fruit, foliage, or stems. Specified rates are based on broadcast treatment. For band applications or spot applications around trees in fruit or nut plantings, reduce the broadcast rate of Princep 4L and water per acre in proportion to the area actually sprayed.

*Precautions (All fruit and nut crops): To avoid crop injury, (1) Apply only to orchards or groves where trees have been established 12 months or more, unless specified differently. (2) Make only one application per year, except as noted otherwise. (3) Do not use on gravelly, sand, or loamy sand soil. (4) Immediately following application, limit overhead sprinkler irrigation to  $\frac{1}{2}$  inch.*

### **Almonds, Peaches, and Nectarines (CA Only)**

Princep 4L must be applied in a 2 to 4-ft. band on each side of the tree row at a rate of 1-2 qt of Princep 4L per treated acre. Apply before weeds emerge in late fall or early winter. Weeds controlled by 1 qt of Princep 4L include burclover, common chickweed, wild mustard, and shepherdspurse. Do not apply more than 2 qt Princep 4L/A (2 lb ai/per treated acre) per calendar year. Do not apply more than once per calendar year.

*Precautions: To avoid crop injury, (1) Do not treat trees established in the grove less than 3 years. (2) Do not treat the Mission (TX) variety of almonds. (3) Do not apply to almond trees propagated on plum rootstocks. (4) Do not replant almonds, peaches, or nectarines in treated soil for 12 months after treatment. (5) Do not apply on soil with less than 1% organic matter. (6) Do not treat areas where water will accumulate.*

### **Apples, Pears, and Tart Cherries**

Apply 2-4 qt/A Princep 4L. Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than once per calendar year. For apples, the pre-harvest interval is 150 days.

### **Avocados**

**CA and FL Only:** Apply 2-4 qt/A Princep 4L after final preparation of grove. Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than once per calendar year.

### **Blueberries and Caneberries (Blackberries, Boysenberries, Loganberries, and Raspberries)**

Apply 2-4 qt/A Princep 4L in the spring or apply a split application of 2 qt/A Princep 4L in the spring plus 2 qt/A Princep 4L in the fall. Apply in a minimum of 40 gal of water per acre.

On plantings less than 6 months old, use ½ the above rate.

To control quackgrass, apply 4 qt/A Princep 4L in the fall or split the application, applying 2 qt/A Princep 4L in the fall plus 2 qt/A Princep 4L in the spring, when quackgrass is actively growing.

Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than twice per calendar year.

**Note:** Do not apply when fruit is present, or illegal residues may result.

## **Filberts**

Apply 2-4 qt/A Princep 4L in the fall or apply a split application of 2 qt/A Princep 4L in the fall plus 2 qt/A Princep 4L in the spring. Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than twice per calendar year.

*Precaution: If trees are planted on a hillside, excessive soil erosion may result from the elimination of weeds.*

**Note:** Do not apply when nuts are on the ground during the harvest period, or illegal residues may result.

## **Grapes**

Apply 2-4 qt/A Princep 4L any time between harvest and early spring. Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than once per calendar year.

*Precaution: Do not use in vineyards established less than 3 years, or crop injury may occur.*

## **Grapefruit, Lemons, and Oranges**

**AZ (Lemons and Oranges Only):** Apply a split application of 1.6 qt/A Princep 4L in the spring plus 1.6 qt/A Princep 4L in the fall. Do not apply more than 3.2 qt Princep 4L/A (3.2 lb ai/A) per calendar year. Do not apply more than 1.6 qt Princep 4L per acre (1.6 lb ai/A) per application.

**CA:** Apply 2-4 qt/A Princep 4L in a single application, or apply 2 qt/A Princep 4L in the fall and 2 qt/A Princep 4L in the spring. Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than twice per calendar year.

*Precaution: Do not use in the Imperial, Coachella, or Palo Verde Valleys, or crop injury may occur.*

## **FL (Grapefruit and Oranges Only)**

**Broadcast Applications:** Apply up to 4 qt of Princep 4L/A per application to weed-free soil once during the spring and/or once during the fall to control weeds expected to emerge during these periods. Apply prior to emergence of weeds or if weeds have emerged, apply in tank mixture with a contact herbicide. Use caution to keep the treatment off the foliage, fruit, or trunk of citrus trees. Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per application. Do not apply more than 8 qt Princep 4L per acre (8 lb ai/A) per calendar year.

**Banded Applications:** For control of difficult species, such as balsamapple vine and spanishneedles, and partial control of honeyvine milkweed, apply no more than 8 qt of Princep 4L (8 lb ai/A) per treated acre as a single application in the spring using a 50% band application. The amount of Princep 4L per acre of field must not exceed 4 qt (4 lb ai/A). Apply once in the spring growing season between January and April. Do not make a fall Princep 4L application if this treatment was used in the spring. When emerged weeds are present, apply Princep 4L in tank mixture with a recommended contact herbicide. Follow all directions, precautions, limitations, etc. on the tank mix products.

**TX (Grapefruit and Oranges Only):** Apply 4 qt/A Princep 4L. Do not apply more than 4 qt of Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than twice per calendar year.

*Precautions (All areas): To avoid crop injury, (1) Do not use in nurseries. (2) Do not apply to bedded grapefruit, lemons, or oranges (except for FL grapefruit and oranges). (3) Do not apply to trees under stress from freeze damage for one year after the freeze. (4) Do not exceed 4 qt/acre/year of Princep 4L on grove planted trees 1 year old or less, or crop injury may occur. Note: Dark-red grapefruit hybrids, e.g. "Star Ruby", have a higher risk of crop injury than non-dark-red types.*

### **Macadamia Nuts**

Apply 2-4 qt Princep 4L in 50 gal of water per acre before harvest and just prior to weed emergence. Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than once per calendar year.

**Note:** Do not apply when nuts are on the ground during the harvest period, as illegal residues may result.

### **Olives**

Apply 2-4 qt/A Princep 4L following grove preparation in the fall. Repeat annually in midwinter. Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than once per calendar year.

### **Peaches, Plums, and Sweet Cherries**

Apply 1.6-4 qt/A Princep 4L. Apply in late fall to early spring prior to weed emergence. Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than once per calendar year.

*Precautions: To avoid crop injury, (1) Peaches: use only in AR, LA, MO, OK, TX, and states east of the Mississippi River. For CA, see specific directions in the Almonds, Peaches, and Nectarines (CA only) section. (2) Plums and sweet cherries: use only in MO and states east of the Mississippi River, except TN.*

## **Pecans**

Apply 2-4 qt/A Princep 4L before weeds emerge in the spring. Do not apply more than 4 qt Princep 4L per acre (4 lb ai/A) per calendar year. Do not apply more than once per calendar year.

*Precautions: To avoid crop injury, (1) Do not use west of the Pecos River in TX or in AZ, CA, or NM. (2) Do not make applications to transplanted trees that have been established less than 2 years in the grove.*

**Note:** Do not apply when nuts are on the ground, or illegal residues may result. Do not allow animals to graze treated areas.

## **Strawberries**

**OR and WA Only:** For control of chickweed, groundsel, mustard, and shepherdspurse, apply broadcast 1 qt/A Princep 4L. In fields where overhead irrigation is used to activate this product, apply after harvest at time of bed renovation. In fields where overhead irrigation is not available, apply during early October through November. Do not apply more than 1 qt Princep 4L/A (1 lb. ai/A) per calendar year. Do not apply more than once per calendar year.

*Precautions: To avoid crop injury, (1) Make only one application per growing season. (2) Do not apply within 4 months after transplanting.*

## **Walnuts**

Apply 2-4 qt/A Princep 4L. Leveling and furrowing operations after application will lessen effectiveness of weed control. Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than once per calendar year.

**Note:** Do not apply when nuts are on the ground, or illegal residues may result.

## **Princep 4L Plus Bromacil 80W for Grapefruit and Oranges (FL Only)**

Use in grapefruit and oranges in FL for control of balsamapple, black nightshade, carpetweed, crabgrass, cudweed, dayweed, Florida pusley, horseweed, pepperweed, pigweed, poorjoe, ragweed, rattlebox, spanishneedles, and sandbur, and for partial control of bermudagrass, bahiagrass, pangolagrass, paragrass, and torpedograss. Apply 4 qt of Princep 4L plus 3-4 lb of Bromacil 80W per acre beneath trees in a minimum of 40 gal of water per acre before or soon after weed growth begins. Use caution to keep the spray off the foliage, fruit, or trunk of citrus trees. When mixing, add Bromacil 80W slurry to water in spray tank, agitate thoroughly, then add Princep 4L and agitate thoroughly again. Use the lower rates for light weed infestations or all applications in bedded citrus areas. Use the higher rates for heavy weed infestations

only in ridge grown citrus areas. Temporary yellowing of citrus leaves may occur following treatment.

*Precautions: To avoid crop injury, (1) Do not use in nurseries, or where trees are under stress from freeze damage for one year after the freeze. (2) Do not use on soil with less than 1% organic matter or on poorly drained soil. (3) Do not treat trees planted in irrigation furrows. (4) Do not treat diseased trees such as those with foot rot. (5) Do not use in groves interplanted with other trees or desirable plants, nor in home grapefruit or orange plantings, or in areas where roots of other valuable plants or trees may extend. (6) Treated areas may be planted to citrus trees one year after application. (7) Do not rotate to other crops within 2 years after application.*

**Note:** Apply only once per year and avoid contact with foliage and fruit with spray or mist, or illegal residues may result.

### **Princep 4L Plus Gramoxone Inteon®**

This tank mix is effective in the following fruit and nut crops for kill of existing vegetation and for residual control of the annual broadleaf and grass weeds claimed for Princep 4L applied alone. This combination is also effective for top kill and suppression of perennial weeds. In FL, this mixture may be applied in spring or fall to emerged weeds.

Use this tank mix on these crops:

almonds (CA only)	olives
apples	oranges <sup>2</sup>
avocados (CA and FL <sup>1</sup> only)	peaches <sup>3</sup>
cherries (tart and sweet <sup>4</sup> )	pears
filberts	pecans
grapefruit (CA and TX only)	plums <sup>4</sup>
grapes	walnuts
lemons (AZ and CA only)	
macadamia nuts	

Apply the Princep 4L rate given under the appropriate crop on this label plus the specified labeled rate of Gramoxone Inteon in 50-200 gal (30-50 gal for pecans) of water per acre to the orchard floor, avoiding contact with fruit, foliage, or stems. Add a nonionic surfactant, such as X-77®, at 0.5 pt/100 gal of spray. Apply when weeds are succulent and new growth is 1-6 inches tall. For mature woody weeds or difficult to control perennial weeds, re-treat or spot treat with Gramoxone Inteon if regrowth occurs.

Add Princep 4L to the spray tank first (refer to **Mixing Procedures** section of this label), then add Gramoxone Inteon, and add the surfactant last. Provide constant agitation during mixing and application to keep the mixture in suspension.

*Precautions: To avoid crop injury, (1) Apply the tank mix only once per year. (2) Use a shield for young trees or vines.*

Refer to the Princep 4L and Gramoxone Inteon labels for further directions, specific weeds controlled, and precautions and limitations on each crop.

<sup>1</sup>In avocados in FL, this tank mix also controls balsamapple, rattail amaranth, and at the higher specified rate of each herbicide, it suppresses coral vine.

<sup>2</sup>In oranges in FL, apply 4 qt of Princep 4L per acre per application. Do not exceed 8 qt of Princep 4L per calendar year.

<sup>3</sup>Limited to AR, CA, LA, MO, OK, TX, and states east of the Mississippi River. As specified, refer to Princep 4L sections **Almonds, Peaches, and Nectarines (CA only) or Peaches, Plums, and Sweet Cherries** for rate of Princep 4L and other information.

<sup>4</sup>Limited to MO and states east of the Mississippi River, except TN.

### **Tank Mixture with Roundup® or Touchdown® Brand Herbicides**

This tank mixture is effective in grape vineyards and in the following bearing or nonbearing tree crops for control of existing vegetation and for residual control of the annual broadleaf and grass weeds claimed for this product applied alone. This combination is also effective for partial control of perennial weeds contacted by the spray mixture during application.

almonds\*\* (CA only)  
apples  
avocados\* (CA and FL only)  
cherries (tart and sweet\*\*\*\*<sup>2</sup>)  
filberts\*\*  
grapefruits\*\*\* (CA, FL, and TX)  
grapes\*  
lemons\* (AZ and CA)

macadamia nuts\*\*  
oranges\*\*\* (AZ, CA, FL, and TX)  
peaches\*\*\*\*<sup>1</sup>  
pears\*  
pecans\*\*  
plums\*\*\*\*<sup>2</sup>  
walnuts\*\*

Use the specified rate given elsewhere on this label for Princep 4L applied alone to the crop being treated. Add to the spray tank the specified labeled rate of a Roundup or Touchdown brand product per acre, depending on weeds present and their growth stage. Also add an agriculturally approved nonionic surfactant at 0.5% by volume of spray solution. Apply the mixture in 10-40 gal of water per acre as a postemergence spray to the weeds at the appropriate weed growth stage given on the Roundup label.

Add Princep 4L to the spray tank first, then add the Roundup or Touchdown brand product. Provide constant agitation during mixing and application to keep the mixture in suspension. Refer to **Application Procedures** section of this label for further directions.

*Precaution: To avoid crop injury, take extreme care to avoid contact of herbicide solution, spray, drift, or mist with foliage or green bark of trunk, branches, suckers, fruit, or other parts of trees or vines. Observe precautions on both the Princep 4L and Roundup or Touchdown labels for each crop involved.*

Always refer to the labels of both herbicides for further directions, specific weeds controlled, and precautions and limitations on each crop.

\*Allow a minimum of 14 days between last application and harvest.

\*\*Allow a minimum of 21 days between last application and harvest of these crops.

\*\*\*Allow a minimum of 1 day between last application and harvest of these crops.

\*\*\*\*Allow a minimum of 17 days between last application and harvest of these crops.

<sup>1</sup>Limited to AR, CA, LA, MO, OK, TX, and states east of the Mississippi River. For CA, see specific directions in the **Almonds, Peaches, and Nectarines (CA only)** section.

<sup>2</sup>Plums and sweet cherries: limited to MO and states east of the Mississippi River, except TN.

### **Tank Mixture with Solicam®**

For improved control of such weeds as clover, cutleaf eveningprimrose, dandelion, henbit, horseweed or marestail, lambsquarters, and puncturevine, apply Princep 4L in tank mixture with Solicam DF on these crops:

oranges  
grapefruit  
lemons

Apply 4 qt/A of Princep 4L plus 4-5 lb of Solicam DF Herbicide (78.6% active ingredient) in 20-100 gal of water per acre. Princep 4L + Solicam may be applied in tank mixture with Gramoxone Inteon or Roundup.

Follow the labeled directions and restrictions of use on labels of the herbicides used in mixtures with Princep 4L.

*Precaution: Keep Princep 4L + Solicam mixtures from contacting foliage, fruits, and stems of citrus trees during spraying.*

## Princep 4L Plus Surflan®

Use this tank mix in the following crops for preemergence control of all weeds claimed on both labels:

almonds	lemons
apples	oranges
avocados	peaches
caneberries	pears
cherries	pecans
filberts	plums
grapes	English walnuts
grapefruit	

Apply the Princep 4L rate given under the appropriate crop on this label plus 2.67-5.33 lb of Surflan 75W or 2-4 qt of Surflan A.S. in 20-40 gal of water per acre. Refer to the Surflan 75W or Surflan A.S. label for complete tank mix directions, and use 0.8 qt of Princep 4L for each pound of Princep 80W. Observe all precautions and limitations on the Princep 4L and Surflan labels.

## FIELD CROPS

### Corn (Field and Sweet)

Apply a maximum of 2 qt Princep 4L per acre (2.0 lb ai/A) as a single preemergence application on soils that are not highly erodible or on highly erodible soils, as defined by the Natural Resources Conservation Service, if at least 30% of the soil is covered with plant residues. If a second treatment is required following an earlier herbicide application, the total simazine applied may not exceed 2.5 lb ai/A per calendar year.

If the soil is highly erodible and covered with <30% plant residues, apply a maximum of 1.6 lb ai/acre as a single preemergence application. For highly erodible soils and is covered with <30% plant residue, do not apply more than one application of Princep 4L and not more than 1.6 lb ai/A (1.6 qt/A).

Pre-grazing/pre-harvest interval for field corn: 60 days.  
Pre-grazing/pre-harvest interval for sweet corn: 45 days.

Nitrogen solution or complete liquid fertilizer may replace all or part of the water in the spray. Determine the physical compatibility of Princep 4L with fertilizer before use. Refer to the **Product Information** section of this label for a compatibility test procedure. Do not apply after corn has emerged, as there is danger of liquid fertilizer causing crop injury. Use a minimum of 10 gal of spray mixture per acre.

**Preemergence:** Apply before weeds and corn emerge. Use the specified rate as stated above.

**Preplant:** Broadcast in the spring after plowing at the specified rate as stated above. Apply before, during, or after final seedbed preparation. If soil is tilled or worked after application, avoid deep incorporation of Princep 4L. Best results will be obtained when Princep 4L is applied within 2 weeks before planting. Under dry weather conditions, preplant applications may give better weed control than preemergence. If weeds develop, particularly under relatively dry conditions, a shallow cultivation will generally result in better weed control.

### **Winter Annual Broadleaf Control – Preemergence Fall Application**

For preemergence control of winter annual weeds, such as common chickweed, henbit, shepherdspurse, tansymustard, wild mustard, annual bluegrass, downy brome, and others, broadcast 1 qt/A of Princep 4L after harvest of the preceding crop and prior to weed emergence on land to be planted to corn the following year. A tillage operation may precede the application. Do not apply to frozen ground. If Princep 4L is used in the fall corn weed control program, do not exceed 1.5 qt of Princep 4L preemergence in the spring.

*Precautions: (1) Do not apply more than 2.5 qt of Princep 4L per acre of corn per calendar year. (2) Do not plant any crop except corn until the following year, or injury may occur. (3) Following harvest, plow and thoroughly till the soil in fall or spring to minimize possible injury to spring-seeded rotational crops, regardless of the rate used. (4) Do not apply Princep 4L preplant incorporated for weed control in corn in the High Plains and Intermountain areas of the West (including central and western KS, western NE, western OK, and the Panhandle of TX) where rainfall is sparse and erratic or where irrigation is required. (5) In the High Plains and Intermountain areas of the West where rainfall is sparse and erratic or where irrigation is required, use Princep 4L only when corn is to follow corn or when a crop of untreated corn is to precede other rotational crops. (6) Injury may occur to soybeans planted in north-central and northwest IA, south-central and southwest MN, northeast NE, southeast SD, and other areas the year following application on soils having a calcareous surface layer. (7) Do not plant sugar beets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small-seeded legumes and grasses the year following Princep 4L application, or injury may occur.*

**Note:** Do not graze treated areas, or illegal residues may result.

### **Tank Mixtures on Corn**

**AAtrex®:** Use Princep 4L in a preplant or preemergence tank mixture with AAtrex Nine-O®, or AAtrex 4L for control of many annual weeds, including carpetweed, crabgrass, fall panicum, foxtail, lambsquarters, morningglory, pigweed, ragweed, and velvetleaf.

When tank mixing or sequentially applying simazine and/or atrazine or products containing either active ingredient to corn, the total pounds of simazine and/or atrazine applied must not exceed 2.5 lb ai/acre per calendar year.

Refer to the AAtrex label for complete directions and use 1 qt of this product for each 1.1 lb of Princep Caliber 90. Also refer to the AAtrex label and the **Corn** section of this label for precautions and limitations.

**Gramoxone Inteon:** Use in a tank mixture where corn will be planted directly in a cover crop, established sod, or previous crop residues. This combination controls existing vegetation and provides residual control of the annual broadleaf and grass weeds listed under the **Product Information** section.

Add Princep 4L to the spray tank, mix thoroughly with water, and then add Gramoxone Inteon and a nonionic surfactant. Provide constant agitation during mixing and application to keep the mixture in suspension.

Apply up to 2 qt of Princep 4L plus the specified labeled rate of Gramoxone Inteon in 20-60 gal of water per acre as a broadcast spray, either before or after planting, but before corn emerges. Add a nonionic surfactant at the rate of 0.5 pt/100 gal of spray volume.

For further information, see product information, caution and warning statements, precautions, and notes on the Princep 4L and the Gramoxone Inteon labels.

## **NURSERIES, AND CHRISTMAS TREE PLANTINGS**

### **Nurseries (see list below)**

Apply 2-3 qt Princep 4L in at least 25 gal of water per acre in fall or spring. Do not apply more than 3 qt Princep 4L/A (3 lb ai/A) per calendar year. Do not apply more than once per calendar year.

*Precautions: To avoid plant injury, do not apply for at least one year after transplanting.*

### **Christmas Tree Plantings (see list below)**

Remove weed growth before application. Apply 2-4 qt Princep 4L in at least 25 gal of water per acre after transplanting. Use at the same rate for annual maintenance applications.

For quackgrass control apply 4 qt/A Princep 4L in the fall or apply a split application of 2 qt/A Princep 4L in the fall plus 2 qt/A Princep 4L in early spring, after quackgrass begins growth.

Do not apply more than 4 qt Princep 4L/A (4 lb ai/A) per calendar year. Do not apply more than twice per calendar year.

*Precautions: To avoid tree injury, (1) Do not use Princep 4L on seedbeds or cuttingbeds. (2) In CA, OR, and WA, do not apply to Christmas trees sooner than one year after transplanting. In other areas, do not apply to Christmas trees transplants less than 2 years of age. (3) Do not use until soil is firmly settled around roots. (4) Do not apply more than once a year, except as directed for quackgrass control.*

Apply Princep 4L to these species of trees and shrubs, as directed above:

---

**Conifers**

---

**Deciduous Trees and Woody Ornamentals**

---

arborvitae  
Austrian pine  
Bishop pine\*  
knobcone pine\*  
lodgepole pine (shore pine)  
Monterey pine\*  
Mugho pine  
red pine (Norway pine)  
Scotch pine  
white pine  
blue spruce  
Norway spruce  
red spruce  
white spruce  
balsam fir  
Douglas fir  
Fraser fir  
white fir  
hemlock  
juniper  
red cedar  
white cedar  
yew (*Taxus* spp.)

American elm  
Siberian elm  
barberry  
boxelder  
bush honeysuckle  
caragana  
cotoneaster  
dogwood  
eucalyptus  
holly (*Ilex* spp.) (max. 3 qt/A)  
honey locust  
Oregon grape (*Mahonia* spp.)  
*Pieris* spp. (max. 3 qt/A)  
red oak  
Russian olive  
oleander\*  
palm (max. 2 qt/A)\*  
bottle brush\*  
carob\*

---

\*For CA only

**Pennant Magnum® Tank Mix:** Princep 4L may be tank mixed with Pennant Magnum Herbicide to control weeds in containerized, field, and liner\* grown ornamentals and commercial landscapes. See the Pennant Magnum label for ornamental species, weeds controlled with this tank mixture, and for other information.

\*Plants transplanted normally in rows in a nursery or similar area for further growth prior to transplanting to final growing place.

**Surflan Tank Mix:** On Christmas tree plantings, use this tank mix for preemergence control of weeds listed on the Surflan 75W (or Surflan A.S.) and Princep 4L labels. Use on field grown conifer species listed on the labels for each herbicide plus grand fir, alpine fir, Engelmann spruce, black spruce, Colorado blue spruce, Coulter pine, giant redwood, and Veitchi fir.

Broadcast the mixture as a directed spray to the soil surface or as an ovetop spray, using 2-4 qt of Princep 4L and 2.67-5.33 lb of Surflan 75W (or 2-4 qt of Surflan A.S.). Apply in sufficient water per acre to uniformly treat the area. Follow ovetop sprays with sprinkler irrigation to move the herbicide from leaf surfaces to the soil. Remove weed growth before application. Mix weed residues, prunings, or trash into the soil, or remove them before treatment. Soil should be in good tilth and free of clods at time of application. Shallow cultivation (1-2 inches) after treatment will not reduce weed control. Observe all precautions and limitations on the Princep 4L and Surflan labels.

**Note:** Length of weed control may be reduced when continuous wet soil conditions follow herbicide application.

*Precautions: To avoid plant injury, (1) Do not use on seedbeds or on unrooted cuttings. (2) Do not use in greenhouses or other enclosed areas.*

### **TURFGRASSES FOR SOD (FL ONLY)**

#### **St. Augustinegrass, Bermudagrass, Centipedegrass, and Zoysiagrass**

Apply 2-4 qt/A of Princep 4L, according to soil texture as indicated below. This product must be watered in immediately after application if applied at a rate greater than 2 lb ai/A (2 qt/A of Princep 4L).

Muck or peat	4 qt	Old beds	within 2 days after lifting of sod
		New beds	3-4 days after sprigging or plugging
Sandy soil	2 qt	Old beds	within 2 days after lifting of sod
		New beds	7-10 days after sprigging or plugging

If weeds regrow, apply an additional 2 qt/A or Princep 4L on muck or peat, or 1 qt/A of Princep 4L on sandy soil.

*Precautions: To avoid crop injury, (1) Do not apply within 30 days prior to cutting or lifting. (2) Do not apply in combination with surfactants or other spray additives. (3) Use only on turfgrass reasonably free of infestations of insects, nematodes, and diseases. (4) On newly sprigged turfgrass, temporary slowing of growth may follow application. (5) Do not exceed 4 qt of Princep 4L per acre (4 lb ai/A) per application.*

(6) Do not apply more than 2 applications per year. (7) Do not exceed 6 qt Princep 4L per acre (6 lb ai/A) per calendar year.

Note: Do not graze or feed turf clippings to animals or illegal residues may result.

## **TURFGRASSES FOR SOD (IN STATES EXCEPT FL)**

### **St. Augustinegrass, Bermudagrass, Centipedegrass, and Zoysiagrass**

Apply 1-2 qt/A of Princep 4L.

Do not apply to established beds within 2 days after lifting of sod. Do not apply to new beds before 7-10 days after sprigging or plugging.

Do not apply more than 2 lb ai/A (2 qt of Princep 4L) per application and not more than two applications per calendar year. Do not exceed 3 qt/A Princep 4L (3 lb ai/A) per calendar year.

*Precautions: On newly sprigged turfgrass, hybrid bermudagrass, nondormant bermudagrass, or nondormant zoysiagrass, temporary slowing of growth and yellowing may occur following application. To avoid turf injury, (1) Use only on turfgrass reasonably free of infestations of insects, nematodes, and diseases. (2) Do not use north of NC (except in the VA Coastal Plains) or on soils with a pH above 7.8. (3) Do not use on muck or alkaline soils. (4) Do not apply over the rooting area of trees or ornamentals not listed on this label. (5) Do not seed or overseed with desirable turfgrass within 4 months before or 6 months after treatment. (6) Do not apply this product to newly seeded grasses until they have overwintered and have a well-developed rhizome system. (7) Do not exceed 2 qt/A of Princep 4L within 12 months of seeding grasses.*

**Note:** Do not graze or feed turf clippings to animals or illegal residues may result.

## **TURFGRASS FOR FAIRWAYS, LAWNS, AND SIMILAR AREAS**

### **Bermudagrass, Centipedegrass, St. Augustinegrass, and Zoysiagrass**

Apply Princep 4L after September 1 (after October 1 for annual bluegrass) before emergence of winter annual weeds. Fall applications of Princep 4L will control annual bluegrass, burclover, lawn burweed, common and mouseear chickweed, corn speedwell, henbit, hop clover, spurweed, and parsley-piert. Princep 4L will also control these weeds soon after emergence. For control of summer annual weeds listed in the **Product Information** section of this label, apply Princep in late winter before the weeds emerge. Apply in a minimum of 15 gal of water per acre.

Irrigate with ½ inch of water if rainfall does not occur within 10 days after preemergence treatment.

Where annual bluegrass is the major weed, use 1 qt of Princep 4L per acre (22 ml. or 0.75 fl. oz. per 1,000 sq. ft.). Use 1-2 qt/A of Princep 4L (22-44 ml. or 0.75-1.5 fl. oz. per 1,000 sq. ft.) for control of other weeds. However, do not exceed 1 qt/A of Princep 4L per treatment on newly sprigged turfgrass or on hybrid bermudagrass.

For control of summer annuals which emerge after the initial application, apply an additional 1 qt/A of Princep 4L at least 30 days after the initial application, but not after June 1. However, do not make more than 2 applications per calendar year.

*Precautions: On newly sprigged turfgrass, hybrid bermudagrass, nondormant bermudagrass, or nondormant zoysiagrass, temporary slowing of growth and yellowing may occur following application. To avoid turf injury, (1) Use only on turfgrass reasonably free of infestations of insects, nematodes, and diseases. (2) Do not use on golf greens. (3) Do not use north of NC (except in the VA Coastal Plains) or on soils with a pH above 7.8. (4) Do not use on muck or alkaline soils. (5) Do not apply over the rooting area of trees or ornamentals not listed on this label. (6) Do not seed or overseed with desirable turfgrass within 4 months before or 6 months after treatment. (7) Do not apply this product to newly seeded grasses until they have overwintered and have a well-developed rhizome system. (8) Do not exceed 2 qt/A of Princep 4L within 12 months of seeding grasses. (9) Do not exceed 2 lb ai/A (2 qt/A of Princep 4L) per application. (10) Do not exceed 3 qt/A Princep 4L (3 lb ai/A) per calendar year. (11) Maximum of 2 applications per year.*

**Note:** For residential turf on lawns, Institutional turf, parks or recreational fields, the maximum application rate may either be:

- 1.6 lb ai/A paired with the requirement of 0.5 inches of irrigation; or
- 0.65 lb ai/A without irrigation.

No change for golf course turf and sod farms uses.

Do not graze or feed turf clippings to animals, or illegal residues may result.

## **STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

### **Pesticide Storage**

Ground water contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

### **Pesticide Disposal**

Pesticide wastes may be toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency, or the

Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

**Container Disposal [less than 5 gallons]**

Non-refillable container. Do not reuse or refill this container. Offer for recycling if available.

**Residue Removal [less than 5 gallons]**

Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: empty the remaining contents into application equipment of a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container  $\frac{1}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

**Container Disposal [Bulk/Mini-Bulk]**

Refillable container. Refill this container with Princep 4L Herbicide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

**Residue Removal [Bulk/Mini-Bulk]**

To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-888-8372, day or night.

AAtrex®, AAtrex® Nine-O®, Gramoxone Inteon®, Princep®, Solicam®, Touchdown®, and the Syngenta logo are trademarks of a Syngenta Group Company

Compex® trademark of KALO Agricultural Chemicals, Inc.

Roundup® trademark of Monsanto Company

Surflan® trademark of Dow AgroSciences

Unite® trademark of HACO, Inc.

X-77® trademark of Loveland Industries, Inc.

Viton® is a trademark of E. I. duPont de Nemours and Co.

©20\_\_ Syngenta

For non-emergency (e.g., current product information), call  
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:  
Syngenta Crop Protection, LLC  
P. O. Box 18300  
Greensboro, North Carolina 27419-8300

Princep 4L 526 MAS 1212 AMEND-D NOV2020-CL - di - 11/8/2021  
000100-00526.202021120D.PRINCEP4L\_AMEND\_1120-CL